

## Worksheet1. Connectives.

1. Prove that  $\wedge$  can be defined in terms of  $\neg$  and  $\vee$ . That is prove that the formula  $P \wedge Q$  is equivalent to a formula containing only the variables  $P$  and  $Q$  and  $\neg$  and  $\vee$ .
2. Prove that all binary connectives can be defined in terms of  $\neg$  and  $\vee$  and  $\wedge$ , and by 1. all binary connectives can be defined in terms of  $\neg$  and  $\vee$  (how many binary connectives are there?).